

THE EARLY STAGES OF *RAPALA VARUNA SIMSONI* (MISKIN)  
(LEPIDOPTERA: LYCAENIDAE) FROM  
SOUTH-EASTERN QUEENSLAND

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**Abstract**

The immature stages of *Rapala varuna simsoni* (Miskin) are described and other notes on the life history recorded.

**Introduction**

The Indigo Flash, *Rapala varuna simsoni* (Miskin) is found in New Guinea, throughout the islands of Torres Strait and along the east coast of Queensland from Cape York to Yeppoon, with records from Cooran Tableland and from Brisbane (Common and Waterhouse, 1981). It occurs in a wide variety of habitats from dry open sclerophyll forest to wet rainforest.

The life history for this subspecies has not previously been recorded although Atkins (1975) lists *Alphitonia excelsa* Reissek, as a food plant and Storey (1977) has reared larvae from the flowers of the introduced Litchi (*Litchi chinensis*). During March and April 1981, adults and immature stages were common on a small number of *A. excelsa* trees growing in the Department of Primary Industries complex at Indooroopilly, Brisbane. A number of various instar larvae were collected and nine of these were subsequently reared to adults in Brisbane.

**Life History**

**EGG (Fig. 1)**

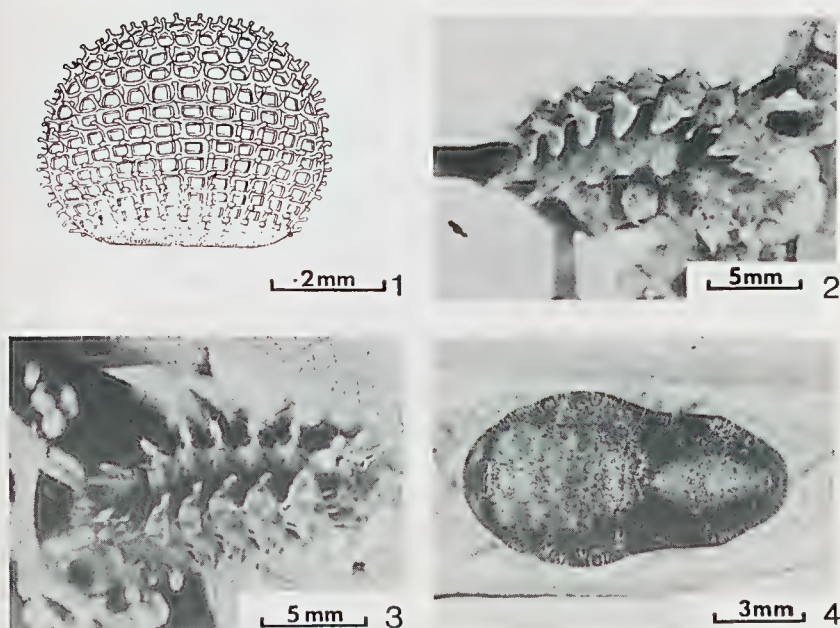
Pale, turning to black just prior to emergence; sub-spherical, with flattened base and depressed apex; micropylar area smooth. Remainder of surface reticulate with truncate projections at intersections of ridges. Diameter 0.4 mm; height 0.3 mm.

**FIRST INSTAR LARVA**

Head large, pale brown. Thorax and abdomen white; covered with long colourless primary setae; with a pair of subdorsal setae, much longer than the rest, on each of the prothorax, mesothorax and abdominal segment 7.

**LAST INSTAR LARVA (Figs 2, 3)**

Head pale brown; covered by prothorax. Prothoracic plate pale yellow-green with a pair of dark red patches, covered with secondary setae and with subdorsal and lateral raised humps. Mesothorax and metathorax with dorsal surface pale yellow-green with a median dark green line; lateral surface dark green with a white curved line. Both meso- and metathorax each with a pair of subdorsal and lateral tooth-like projections, these projections being white with an orange base and bearing colourless secondary setae. Abdominal



Figs 1-4. *Rapala varuna simsoni* (Miskin); (1) egg, lateral view; (2) final instar larva on flower bud; (3) dorsolateral view of final instar larva; (4) pupa, dorsal view.

segments similar in colour to thoracic segments, abdominal segment 7 with a pair of dark red patches; segments 1-6 each with tooth-like projection similar to those of metathorax, those of segment 1 dark red, joined laterally by a red band, those of remaining segments white with orange bases. Anal plate pale yellow-green, ringed laterally by 6 white projections. Length 16.7 mm; width 5.3 mm. Prepupa red-brown.

#### PUPA (Fig. 4)

Pink and white initially, then changing to pale brown with head and thorax marked with black-brown, wing cases black-brown, abdomen blotched with dark brown squares and with last segment ringed with black-brown; surface quite smooth, covered with minute pale brown setae; attached to silken pad by anal hooks and central girdle. Length 11.3 mm; width 6.0 mm.

#### NOTES

Eggs are laid singly on flower buds, flowers and young green stems. First instar larvae burrow into the flower buds and feed internally. Later instars feed openly on the flowers and because of their shape and coloration are extremely difficult to locate. Pupae were not found in the field, but those of the bred specimens occurred on either the upper or lower surfaces of the leaves of the food plant. Pupal duration was 10 to 11 days. The immature stages were not attended by ants and parasitism was not recorded.

Adults of both sexes were on the wing as early as 8 a.m. (Eastern Standard Time) and some were still flying as late as 4 p.m. After midday males established territorial boundaries by flying in circular patterns from their roosting positions in eucalypt trees to the food plants then back again. Females spent the day either feeding on the *Alphitonia* blossom or ovipositing.

In the Brisbane area, *A. exelsa* usually flowers during April and May and in dry seasons flowering does not occur. The food-plant trees during 1981 commenced flowering as early as February and continued through to April. *R. varuna* is normally rare in the Brisbane area, and the coincidence between its relative abundance this year and the early flowering of its food plant is most interesting.

#### Acknowledgements

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- Storey, R., 1977. The litchi as a food plant for lycaenid butterflies. *News. Bull. ent. Soc. Qd* 9(4): 162.

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### OGYRIS AMARYLLIS AMATA WATERHOUSE (LEPIDOPTERA: LYCAENIDAE) TENDED BY CAMPONOTUS ANTS

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In September 1981, while searching for the early stages of *Ogyris amaryllis amata* at Coppins Crossing on the Molonglo River, Australian Capital Territory, twelve late-instar larvae and pupae were found in a hollow of a decayed branch stump. These were actively tended by a number of sugar ants *Camponotus* sp. Although *O. amaryllis amata* is known to be tended by *Iridomyrmex* ants (Common and Waterhouse, 1981), it has not previously been reported that *O. amaryllis* is also tended by *Camponotus* ants. Both *Iridomyrmex* and *Camponotus* ants were tending the *O. amaryllis amata* larvae and pupae at Coppins Crossing, even on the same tree, but at no time were the two ants observed co-attending at the same sites.

#### Reference

- Common, I. F. B. and Waterhouse, D. F., 1981. *Butterflies of Australia*. Revised edition. Angus and Robertson, Sydney, pp. 1-682.